

## **REMARKS**

Claims 1 through 48 were pending in the application. Claims 49 through 60 have been added by this Amendment.

For the purpose of reducing excess claim fees, claims 16, 30, and 36 have been cancelled without prejudice to the subject matter contained therein. Applicant expressly reserves the right to refile these cancelled claims in a subsequent application and contest the rejections thereof.

Claims 1-15, 17-29, 31-35, and 37-60 are presented for further consideration by the Examiner. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

## **ALLOWABLE SUBJECT MATTER**

The Examiner states that claims 19-20, 37, and 46-47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

Applicant has rewritten claims 19, 37, and 46 into independent form. Therefore, independent claims 19, 37, and 46 should now be in condition for allowance. Additionally, claim 20 depends from claim 19, and claim 47 depends from claim 46. Claims 20 and 47 should also be allowable at least due to their dependency from allowable claims.

## **REJECTIONS UNDER 35 U.S.C. § 102**

Claims 1-4, 6-10, 15-18, 21-24, 29-36, and 38-41 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Pat. No. 6,735,887 (hereinafter Muzzammel). This rejection is respectfully traversed.

The Office action states that the inventions recited in these claims are anticipated by Muzzammel. The Office action, however, fails to identify and Muzzammel does not disclose an apparatus having a single wheel substantially centrally disposed between the two spaced-apart members of the driving member. Additionally, Muzzammel does not disclose wheels or an assembly that

compress the wheel assembly or a wheel assembly that is capable of recoiling through a fulcrum member at the wheel axle. Muzzammel does not disclose an apparatus in which the blade springs upwards and forwards when the handle is pushed downwards as recited by claim 1. For these reasons alone, the 102 rejection to claim 1 should be withdrawn.

Claim 1 has been amended to clarify that the apparatus includes a single wheel having a diameter equal to or greater than about 30 inches. This is different than what is taught by Muzzammel. Muzzammel discloses a pair of wheels, not a single wheel. Plus, Muzzammel discloses that each of the two wheels has a diameter between 6 and 26 inches. (Muzzammel, column 2, lines 31-37). This is in contrast to the recitations of amended claim 1. Muzzammel also fails to recognize the advantages that can be realized in various embodiments of the present invention in which a single relatively large wheel (as opposed to two spaced-apart smaller wheels as in Muzzammel) can allow for more maneuverability (e.g., tighter turning radius with the ability to "turn on a dime", etc.), greater ability to clear snow around obstacles, and for increased ability to throw material from the shovel blade. As identified by the inventor hereof, the utilization of a single wheel having a diameter greater than about 30 inches provides advantages over Muzzammel and similar devices. The single large wheel enables the apparatus to be operated by a user over rough terrain including curbs that often have a height of 6 to 10 inches. The inventor identified the problems and limitations of the current assemblies and specifically chose a single wheel, versus multiple wheels like Muzzammel, to increase ease of use and operability over these obstacles. For example, the present single wheel enables the user to angle or tilt the apparatus during operation or to tip or lean the apparatus to accomplish improved maneuvering, none of which the design of Muzzammel is capable of performing due to its two wheel assembly. In addition, having a single wheel substantially centrally disposed between two spaced-apart members of the driving member also allows the single wheel to roll along a clean path already cleared of snow by the shovel blade. By way of further example only, having a single wheel can also allow for reductions in costs of construction

by eliminating the cost of the second wheel and extra framing needed to accommodate the second wheel.

Additionally, the single wheel with a diameter of greater than 30 inches provides for lifting of the shovel filled with snow, by way of example, over deeper snow and other obstacles, without impeding the ability to spring generally upward and forward to release the load upward and away from the apparatus. The greater than 30 inch diameter wheel provides for the axle and therefore the fulcrum at greater than 15 inches above the surface. This higher fulcrum provides for improved moments of the force about the fulcrum and for increases in the moment of the forces for lifting the load and for producing upper and forward forces in response to a downward force being applied to the handle. These benefits were not disclosed or addressed by Muzzammel.

It should be also noted that the design of Muzzammel, while referring to a pair of large wheels, does not appreciate the benefits of a wheel greater than 26 inches in diameter and does not easily adapt for use with one or more wheels having a diameter of greater than the identified 26 inches, for example, the recited claim feature of a wheel greater than about 30 inches in diameter. In contrast, the inventor hereof has identified limitations of multiple wheel designs and designs using wheels having a diameter of less than 30 inches. The selection of a single wheel design having a diameter of greater than about 30 inches can provide many improvements over prior designs, such as the design of Muzzammel.

Further, as noted above, claim 1 has been amended to recite that the wheel is substantially centrally disposed between two spaced-apart members of the driving member. As disclosed by Muzzammel, the handle portion includes braces on which the axle and pair of wheels are mounted below the handle. Muzzammel does not teach or disclose a single wheel substantially centrally disposed between two spaced-apart members of the driving member. As Muzzammel does not disclose each and every element as recited, claim 1 is allowable.

Further, claim 1 also recites that the blade springs generally upwards and forwards in response to a recoil through the fulcrum member at the axle of the wheel assembly, to thereby release the load of material briskly upward and away from the apparatus. This is also different than taught by Muzzammel. Muzzammel discloses a manually operated plough that can lift snow and carry and transport or move the lifted snow without undue strain to the user. But Muzzamel doesn't mention anything about throwing or propelling snow from the shovel blade. Muzzammel does not teach or disclose a recoil through a fulcrum member and that therefore provides an upward and forward blade movement in response to the recoil. In contrast to claim 1, Muzzammel teaches a rigid frame for picking up and carrying (but not throwing) snow. Muzzamel does not teach an assembly capable of releasing a load of material briskly upward and away from the apparatus.

Accordingly, Muzzammel does not teach each and every recitation of amended claim 1. Therefore, the rejection to claim 1 should be withdrawn for at least these above reasons.

Claims 2-15 depend from claim 1, which Applicant believes to be allowable in view of the remarks above. Accordingly, Applicant respectfully submits that claims 2-15 are each in condition for allowance for at least the reasons given above in connection with independent claim 1.

Claim 3 is further distinguishable over Muzzammel because Muzzammel does not disclose a quick release for disconnecting the wheel assembly from the driving member as recited by claim 3. The Office action states that Muzzammel discloses a quick release for disconnecting the wheel assembly from the driving member. But the Office action does not identify where in Muzzammel such a disclosure is made. Additionally, Applicant has reviewed Muzzammel and could not find any such disclosure therein. Instead, the Muzzammel drawings and specification disclose an axle having a pair of wheels thereon. Muzzammel discloses that the wheels are mounted by means of an axle and connected to the handle by braces (Muzzammel, column 2, lines 24-28) or may be attached to braces instead of the axle (Muzzammel, column 2, lines 28-33). Contrary to the

Office action assertions, however, Muzzammel does not teach, disclose, or suggest a quick release for disconnecting a wheel assembly from a driving member. In contrast, Muzzammel appears to disclose a rigid frame structure in its figures, and the text is silent otherwise. For these additional reasons, the rejection to claim 3 should be withdrawn.

Referring now to independent claim 17, the Office action rejects this claim under 35 U.S.C Section 102 but fails to identify where in Muzzammel each and every claim recitation is disclosed. Claim 17 has different recitations than claim 1 which is not acknowledged in the Office action and that is not disclosed in Muzzammel. As such, the 102 rejection to claim 17 should be withdrawn or a proper rejection issued on which the Applicant can develop a response.

This being said, as an initial matter claim 17 has been amended to include the recitation of a single wheel having a diameter of equal to or greater than 30 inches and that is disposed relative to the driving member for travel within a width of the driving member's footprint. This is different than the apparatus disclosed and taught by Muzzammel. For this reason alone, claim 17 is allowable.

Additionally, claim 17 recites an elongate driving member having a curved upper portion, a generally straight middle portion, and an open curved lower portion. This is different than the snow plough disclosed by Muzzammel that includes a straight frame 7 and a straight handle portion 9 with a couple of braces 8 and 11. In Muzzammel, a pair of wheels is disclosed as being attached to an axle that is attached to the braces or that are directly attached to the braces. In contrast to the teachings of Muzzammel, claim 17 recites an elongate driving member having two curved portions, e.g., a curved upper portion and an open curved lower portion, and a straight portion therebetween. Claim 17 also provides that the axle is attached to the middle portion (e.g., the straight portion that is a portion of the elongate driving member, not a brace). Muzzammel fails to teach and disclose these recitations of claim 17.

Claim 17 has also been amended to clarify that the shovel blade is configured to spring generally upwards and forwards, and to release the material briskly upward and away from the apparatus when the handle is pushed

downwards to cause the wheel assembly to compress and recoil through the fulcrum member at the axle of the wheel assembly. In contrast, Muzzammel discloses a snow plough for picking up and carrying snow. Nowhere does Muzzammel disclose or teach that its snow plough springs upward and forward for throwing the snow when the handle is pushed down or that the wheels compress and recoil through the fulcrum at the axle. Muzzammel also fails to recognize the advantages that can be realized in various embodiments of the present invention in which a single relatively large wheel (as opposed to two spaced-apart smaller wheels as in Muzzammel) can allow for more maneuverability (e.g., tighter turning radius, etc.), easier operation over rough terrain, tipping and angling during operation, and for increased ability to throw material from the shovel blade.

Accordingly, Muzzammel does not teach and disclose each and every feature of claim 17. As such, the rejection of claim 17 should be withdrawn.

Claims 18 and 21-29 depend from claim 17, which Applicant believes to be allowable in view of the remarks above. Accordingly, Applicant respectfully submits that claims 18 and 21-29 are each in condition for allowance for at least the reasons given above in connection with independent claim 17.

Referring now to independent claim 31, claim 31 recites a method of snow removal that was not specifically addressed in the Office action. That is, the Office action failed to identify the particular portions of Muzzammel upon which the anticipation rejection is based. For this reason alone, the 102 rejection to claim 31 should be withdrawn. Alternatively, Applicant respectfully requests the Examiner should provide an indication of where in Muzzammel each and every feature recited in method claim 31 is disclosed in Muzzammel in order to allow Applicant to fully address and respond to the rejection of claim 31.

This notwithstanding, Applicant has amended claim 31 to clarify that the method of snow removal uses an apparatus having a single wheel with a diameter equal to or greater than about 30 inches. The wheel is disposed relative to the yoke for travel within a width of the yoke's footprint. The method includes rolling the single wheel. The method also includes several recitations relating to

the operation and positioning of the shovel blade relative to the single wheel and/or the axle. The method recites shoving onto the shovel blade a load of material lying along the path of the apparatus, wherein shoving includes positioning the shovel blade to a height that is less than the height of the axle. The method also recites pressing the handle downwards, after picking up the load of material, to lift the shovel blade to a level that clears the path and that is less than the height of the axle. The method additionally includes adjusting further the level of the shovel blade to achieve a balanced load with respect to and over the axle of the wheel, wherein the adjusting includes an adjusted level that is less than or about equal to the height of the centrally located wheel. The method further includes at the destination, briskly applying a force at the handle; compressing the wheel assembly in response to the force applied at the handle; recoiling through the wheel assembly in response to the compressing; and propelling the load of material upwards and to a substantial distance away from the apparatus in response to the recoiling, wherein during propelling the height of the shovel blade is generally less than or equal to the height of the wheel.

This is different than what is disclosed by Muzzammel as the Muzzammel manual snow plow is incapable of such a method of operation. Muzzammel has a pair of wheels and therefore cannot, under normal operation, roll on a single wheel. Also, as shown in Muzzammel, the shovel blade has a height during a shoving process that is greater than the axle. After shoving a load into the shovel blade of Muzzammel, an operator pressing downward on the handle will lift the blade and load to a height that is greater than the height of the axle, especially if the handle and blade are balanced with respect to the axle and over the axle of the wheel. As shown in Muzzammel FIG. 1, an adjusted balanced load in Muzzammel will result in the load being at a height greater than the height of the wheel, due to the wheels and/or axles being mounted to a brace and relative sizing of the wheels and shovel blade height.

Muzzammel also does not disclose an apparatus that compresses and recoils and that produces a propelling of the load material upward and to a substantial distance in response to the recoiling, while maintaining a shovel blade

height that is generally less than or equal to the height of the wheel. While an operator may arguably attempt to throw snow with the Muzzammel shovel by pushing down and pushing forward simultaneously, this would require that the shovel blade height be greater than the height of the wheel and would not be in response to a compressing and recoiling by the wheel assembly. Muzzammel also fails to recognize the advantages that can be realized in various embodiments of the present invention in which a single relatively large wheel (as opposed to two spaced-apart smaller wheels as in Muzzammel) can allow for more maneuverability (e.g., tighter turning radius, etc.) and for increased ability to throw material from the shovel blade.

Accordingly, Muzzammel does not teach or disclose each and every feature recited in method claim 31. For at least these reasons, the rejection to claim 31 should be withdrawn.

Additionally, claims 32-35 and 38-41 depend from claim 31, which Applicant believes to be allowable in view of the remarks above. Accordingly, Applicant respectfully submits that claims 32-35 and 38-41 are each in condition for allowance for at least the reasons given above in connection with independent claim 31.

### **REJECTIONS UNDER 35 U.S.C. § 103**

#### ***Claims 5, 11, 25, 43, and 48***

Claims 5, 11, 25, 43, and 48 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Muzzammel in view of U.S. Pat. No. 5,810,408 (hereinafter Armstrong). This rejection is respectfully traversed.

Claims 5 and 11 depend from independent claim 1, and claim 25 depends from independent claim 17. As addressed above, claims 1 and 17 are allowable. And, as noted below, Muzzammel and Armstrong do not disclose or teach each and every feature recited in independent claim 42 (from which claims 43 and 48 depend). Accordingly, Applicant respectfully submits that claims 5, 11, 25, 43, and 48 are each in condition for allowance for at least the reasons given herein in connection with the independent claim from which it depends.

Armstrong discloses a shovel having two adjustable joints and a telescoping handle. But Armstrong does not make up for the shortcomings of Muzzammel in regard to those features recited by the independent claims that are not disclosed by Muzzammel as discussed above with regard to the 102 rejections.

In addition, there is no suggestion in either Muzzammel or Armstrong for their combination. Muzzammel addresses a wheeled snow plow for plowing snow. Armstrong discloses a jointed handle without wheels having interchangeable implements including a shovel blade, fork, rake, and hoe. Indeed, Armstrong appears to teach away from its combination with a wheeled apparatus because the intended uses for the Armstrong device (e.g., raking, hoeing, digging, pitch forking) require the Armstrong device to be lifted completely off the ground such that wheels would not improve its operation but would only make the Armstrong device heavier to lift, more costly, and more cumbersome to use. Because the intended uses disclosed by Armstrong teach away from wheeled devices, Applicant respectfully submits that Armstrong is not a proper reference for rejecting claims 5, 11, 25, 43, and 48. See MPEP § 2143.01 “The proposed modification cannot render the prior art unsatisfactory for its intended purpose”, and MPEP § 2145 “It is improper to combine references where the references teach away from their combination.”

Furthermore, claim 5 has been amended to clarify that the driving member includes a curved S-shaped middle portion having an upper curved section between the handle and the axle and a lower curved section between the axle and the blade. This is different than the two adjustable joints of the Armstrong non-wheeled shovel. Indeed, Armstrong does not teach any curved sections, only adjustable joints. The adjustable joints of Armstrong are on a working device handle without a wheel, and, accordingly, are not located relative to a wheel axle.

MPEP § 2143.01 requires that there be a suggestion or motivation, either in the reference itself or in the knowledge generally available to one skilled in the art to modify or combine the references. Armstrong does not teach or suggest that its handle design can be used in a wheeled hand-operated plough and

similar wheeled device. And, Muzzammel does not suggest a curved or different frame configuration, other than the disclosed straight frame having braces thereon for attaching wheel. Accordingly, Muzzammel alone or in combination with Armstrong does not disclose each and every recitation of claim 5. For this additional reason, the rejection to claim 5 should be withdrawn.

Claim 43, as amended, recites that the middle portion has a generally curved S-shape defined by a lower portion included angle  $\Phi$  between about eighty degrees and about ninety degrees, and an upper portion included angle  $\Phi'$  between about eighty degrees and about ninety degrees. As noted above, neither Armstrong nor Muzzammel, alone or in combination, discloses a curved S-shaped middle portion of a driving member. Armstrong's adjustable joints are not curved and do not form a curved S-shape, and, accordingly, would not provide the advantages associated with such a curved S-shape, such as less costly to fabricate and construct and more durability. The angles in Armstrong are formed at the intersections between upper, middle and lower sections. This is different than the features recited in claim 43 in which the lower portion itself includes the angle  $\Phi$  that is between about eighty degrees and about ninety degrees and the upper portion itself includes angle  $\Phi'$  that is between about eighty degrees and about ninety degrees. As such, Armstrong in combination with Muzzammel does not disclose each and every feature recited in claim 43. For these additional reasons, the rejection to claim 43 should be withdrawn.

Claim 48, as amended, recites that the middle portion of the driving member is generally S-shaped and includes a curved upper elbow and a lower curved elbow, and wherein the driving member is coupled to the axle and configured such that upon movement of the driving member about the axle, the upper curved elbow moves a distance H that is greater than the distance A moved by the lower curved elbow. As noted above, neither Armstrong nor Muzzammel, alone or in combination, discloses a generally S-shaped middle portion of the driving member. While Armstrong discloses a three piece handle, Armstrong's adjustable joints are not curved and do not form a curved S-shape. Also, the angles in Armstrong are formed at the intersections between upper,

middle and lower sections. This is different than the features recited in claim 43 wherein the middle portion itself includes a curved upper elbow and a lower curved elbow, and wherein the driving member is coupled to the axle and configured such that upon movement of the driving member about the axle, the upper curved elbow (of the middle portion) moves a distance H that is greater than the distance A moved by the lower curved elbow (of the middle portion), as recited by claim 48. As such, Armstrong in combination with Muzzammel does not disclose each and every recitation of claim 48. For these additional reasons, the rejection of claim 48 should be withdrawn.

***Claims 12-14, 26-28, 32-34, 42, 44, and 45***

Claims 12-14, 26-28, 32-34, 42, 44, and 45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Muzzammel alone. This rejection is respectfully traversed.

Claims 12-14, 26-28, and 32-34 depend from an independent claim, which Applicant believes to be allowable in view of the remarks above. Accordingly, Applicant respectfully submits that claims 12-14, 26-28, and 32-34 are each in condition for allowance for at least the reasons given herein in connection with the independent claim from which it depends.

Amended claim 42 recites a single wheel having an outer diameter of greater than about 30 inches. In contrast, Muzzammel discloses a pair of wheels and clearly indicates that each of the two wheels is preferably between 6 inches and 26 inches in diameter. (Muzzammel, column 2, lines 30-33). As such, a single wheel having a diameter greater than about 30 inches is not disclosed or taught by Muzzammel.

Amended claim 42 also recites that the single wheel is disposed relative to the driving member for travel within a width of the driving member's footprint. Muzzammel does not disclose a single wheel located within a width of a driving member's footprint. As such, claim 42 is allowable in view of Muzzammel.

Muzzammel discloses a snow plough having a rigid frame for picking up and carrying snow. Muzzammel includes a pair of spaced apart wheels attached

to braces either directly or with an axle. Accordingly, Muzzammel does not disclose or teach a single wheel disposed relative to a driving member for travel within a width of the driving member's footprint.

Muzzammel also fails to recognize the advantages that can be realized in various embodiments of the present invention in which a single relatively large wheel (as opposed to two spaced-apart smaller wheels as in Muzzammel) can allow for more maneuverability (e.g., tighter turning radius with the ability to "turn on a dime", etc.), greater ability to clear snow around obstacles and edges, and for increased ability to throw material from the shovel blade. As identified by the inventor hereof, the utilization of a single wheel having a diameter greater than about 30 inches provides advantages over Muzzammel and similar devices. The single large wheel enables the apparatus to be operated by a user over rough terrain including curbs that often have a height of 6 to 10 inches or higher as in the case of snow piles. The inventor identified the problems and limitations of the current assemblies and specifically chose a single wheel, versus multiple wheels like Muzzammel, to increase ease of use and operability over these obstacles. For example, the present single wheel enables the user to angle or tilt the apparatus during operation or to tip or lean the apparatus to accomplish improved maneuvering. As another example, a single wheel can also allow for slight angling towards the side to throw snow efficiently while working on pathways by turning slightly mid-throw to toss materials to the side in one generally quick and continuous motion without having to stop and turn and then drop of the materials. None of these advantages can be realized with the design of Muzzammel due to its two wheel assembly. In addition, having a single wheel positioned within a width of the footprint of the driving member allows the single wheel to roll along a clean path already cleared of snow by the shovel blade.

Additionally, the single wheel with a diameter of greater than 30 inches provides for lifting of the shovel filled with snow, by way of example, over deeper snow and other obstacles, without impeding the ability to spring generally upward and forward to release the load upward and away from the apparatus. The greater than 30 inch diameter wheel provides for the axle and therefore the

fulcrum at greater than 15 inches above the surface. This higher fulcrum provides for improved moments of the force about the fulcrum and for increases in the moment of the forces for lifting the load and for producing upper and forward forces in response to a downward force being applied to the handle. These benefits were not disclosed or addressed by Muzzammel.

It should be also noted that the design of Muzzammel, while referring to a pair of large wheels, does not appreciate the benefits of a wheel greater than 26 inches in diameter and does not easily adapt for use with one or more wheels having a diameter of greater than the identified 26 inches, for example, the recited greater than about 30 inches. In contrast, the inventor hereof has identified limitations of multiple wheel designs and designs using wheels having a diameter of less than 30 inches. The selection of a single wheel design having a diameter of greater than about 30 inches can provide many improvements over prior designs, such as the design of Muzzammel. By way of example only, having a single wheel can allow for reductions in costs of construction by eliminating the cost of the second wheel and extra framing needed to accommodate the second wheel.

For at least these reasons, Muzzammel does not render obvious claim 42, and, accordingly, rejection of claim 42 should be withdrawn.

Claims 44 and 45 depend from an independent claim 42, which Applicant believes to be allowable in view of the remarks above. Accordingly, Applicant respectfully submits that claims 44 and 45 are each in condition for allowance for at least the reasons given herein in connection with independent claim 42.

Furthermore, claims 12-14, 26-28, 32-34, 42, 44, and 45 generally stand rejected based at least in part on the assumption that modifying dimensions of length, wheel, and handle height would only require routine experimentation to one of ordinary skill and thus are not patentably distinct features and further assumes that the Muzzammel snow plough would function equally well just outside of these ranges. As will be discussed in more detail below, the obviousness rejections to each of the claims are not supported by Muzzammel even in assuming arguendo that such modification was only a routine matter of

experimentation, which we respectfully submit it is not. Applicant disagrees in that the claimed dimensions provide a result not contemplated, taught, or inherent in Muzzammel. Muzzammel does not address propelling the load upward and forward, but only addresses picking up, plowing, and carrying snow. Additionally, the Muzzammel apparatus cannot provide the operational capabilities of throwing snow, compressing, recoiling, and propelling and would not function equally well by modifying the Muzzammel snow plough to include any one or more of the claimed dimensions as the claimed dimensions are directly related to features and the design of the wheeled apparatus as recited by any one of the corresponding claims 12-14, 26-28, 32-34, 42, 44, and 45. Merely adjusting dimensions of the Muzzammel snow plough to be within these ranges will not result in the Muzzammel snow plough being configured to have the same design or have the same performance capabilities that result from such a design, as recited by any of claims 12-14, 26-28, 32-34, 42, 44, and 45.

Beginning first with amended independent claim 42, amended claim 42 recites various features, such as a single wheel disposed relative to a driving member for travel within a width of the driving member's footprint, by way of example, which are not disclosed by Muzzammel or Armstrong and as such, claim 42 cannot be obvious in view of them individually or in combination as the combination fails to disclose each and every element recited by claim 42. See MPEP § 2143.

Claims 12, 26, and 33 each recite the overall length of the apparatus is between about 78 inches to about 88 inches, and wherein the apparatus is configured such that its overall length can be increased to between about 89 inches to about 100 inches. Claims 14, 28, and 34 recite the height of the handle from a datum plane directly under the wheel assembly is between about 48 inches to about 60 inches, and wherein the apparatus is configured such that the height of the handle from the datum plane can be adjusted to between about 42 inches to about 66 inches.

As noted in the specification for various embodiments of the invention, the overall length of the apparatus and handle height are related to the fulcrum of the

snow shovel about a single wheel assembly that provides for compressing the wheel assembly under a downward force applied at the handle and that then provides a recoil to provide an upward and forward force for propelling the contents from the blade. See, for example, Figs. 4-6 and paragraphs [0028] to [0030] of the application relating to the forces and relationship between these forces and the lengths to provide the upward and forward force at the blade to propel the contents in response to the downward movement of the handle. This is different than what is disclosed and taught by Muzzammel, and those skilled in the art viewing Muzzammel would only modify the Muzzammel snow plough to aid in the lifting of snow about a fulcrum and moving of snow, not the propelling of the snow from the blade. One skilled in the art would not modify Muzzammel through experimentation or otherwise to have the lengths of 78 inches to about 88 inches, that can be increased to between about 89 inches to about 100 inches or to have a handle height of between about 48 to 60, without the use of impermissible hindsight in viewing the present disclosure that provides for propelling the load upward and forward instead of merely lifting and carrying. As such, having the lengths as recited by claims 12, 26, and 33 and the heights as recited by claims 14, 28 and 34 would not have been obvious to one skilled in the art at the time of the invention when only viewing Muzzammel and not having the benefit of the insight and novel solutions presented in the current invention.

Further, it would not be an easy task of simply altering the dimensions of the Muzzammel design because such alterations would have implications on other design parameters. For example, adjusting one dimension of the Muzzammel design (e.g., the wheel size) would have consequences and require constraints and tradeoffs with the dimensions of the other design parameters, and, accordingly, one could not simply change all of the various dimensions of the Muzzammel design to come up with the claimed inventions in one single pass. For the above reasons, each of claims 12, 14, 26, 28, 33, and 34 are allowable and the rejections to these claims should be withdrawn.

Claims 13, 27, and 32 stand rejected on the grounds that the diameter of the wheel being between about 30 and about 36 inches would have been

obvious to one skilled in the art. It has been noted that Muzzammel specifically discloses a snow plough for picking up, carrying, and unloading snow at a distance. Muzzammel indicates that to accomplish the picking up and moving of the snow, the preferred diameter of its pair of wheels is between 6 and 26 inches. Muzzammel does not disclose or address a snow removal apparatus configured to propel the load of material upward and away from the shovel blade in response to a recoil created by the compression of a wheel assembly. The single wheel arrangement as recited by claims 13, 27, and 32, can propel a load, at least in part, due to the wheel being greater than about 30 inches in diameter, and therefore having an axle and fulcrum at greater than about 15 inches above the working surface. Such a higher fulcrum, provides a higher position above the working surface and thereby provides for an increased ability to propel the shovel and its load with less force on the moment arm, e.g., the handle. Having the fulcrum at or near the wheel axle can also provide a better throwing configuration by keeping the lever action independent or separate from the forward motion of the unit, thus increasing the ability to throw forwards and providing greater sensitivity of handle motion to blade motion for a given length and fulcrum position. Relatedly, having the fulcrum at or near the wheel axle can also provide greater range of acceleration of the blade from the ground up to the fulcrum height (which in various embodiments of the invention is at or near the axle height) to aid in throwing snow or other materials from the blade.

These additional benefits were not identified by Muzzammel and Muzzammel's snow plough is not configured to provide such a compression, recoil, and propelling operation. There is no teaching or motivation in Muzzammel to accomplish this, and as such, there is no teaching or motivation to modify Muzzammel, by routine experimentation, or otherwise, to increase the diameter of the single wheel (Muzzammel teaches at least a pair of wheels) to being greater than the 26 inches (which Muzzammel specifically identifies as being the maximum preferred wheel size). Further, it would be no simple task to increase the wheel size in the Muzzammel device, as such increase would

require radical changes to the Muzzammel device affecting the performance and costs of the device.

The wheel size of the claimed inventions are pertinent since a wheel diameter of greater than about 30 inches contributes, at least in part, to provide compression, recoil and propelling of the load in response to a downward movement of the handle. A smaller wheel, as taught by Muzzammel, is not capable of this operation. A wheel diameter of greater than about 30 inches, as contrasted to the maximum wheel diameter taught by Muzzammel of 26 inches, also provides for consideration that the wheel diameter should generally or substantially be at the waist level of the operator. In addition, the larger wheel allows a load to be transported while carried at a higher level (e.g., 18 inches with a single wheel having a 36 inch diameter). The larger wheel can also enhance the throwing ability with a long stroke, including any compression and recoil affect.

In contrast, Muzzammel describes a snow plough having a handle with braces that one skilled in the art would modify or adjust the handle and/or the attachment of the wheels to the braces to accommodate the user height. In other words, Muzzammel presents the structure that one generally skilled in the art would modify in order to adjust the dimensions of the plough to adapt to a user, e.g., by changing the height of the braces or the attachment of the wheels or axle to the braces in order to adjust by experiment or otherwise with the user perceived height. In contrast, various claims of the present application recite a single wheel having a larger (greater than Muzzammel's maximum 26 inch diameter pair of wheels) diameter of between about 30 and about 36 inches. This adjustment would not have been obvious to one of ordinary skill viewing Muzzammel because Muzzammel specifically teaches a maximum wheel diameter of 26 inches. Additionally, modifying Muzzammel to perform the operations of compression, recoiling, and propelling that are at least partially enabled by the wheel diameter would substantially change the fundamental operation of the Muzzammel, e.g., lifting and carrying snow. Additionally, having a wheel size that is greater than specifically taught by Muzzammel would not

have been obvious to one skilled in the art at the time of the invention when only viewing Muzzammel's apparatus for lifting and carrying snow without the impermissible benefit of hindsight of the novel solutions for snow removal by having a single wheel with a diameter of greater than about 30 inches. For these reasons, having a wheel size of between about 30 and about 36 inches is not obvious in view of Muzzammel to one skilled in the art at the time of the invention.

#### **NEW CLAIMS 49-60**

New claims 49-60 are supported by the application as originally filed. Accordingly, no new matter is introduced by the addition of claims 49-60.

New claims 49-60 each depend from an independent claim shown above to be allowable. Accordingly, Applicant respectfully submit that claims 49-60 are each in condition for allowance for at least the reasons given above in connection with the independent claim from which it depends.

In addition, claims 49-60 are further patentably distinguishable over Muzzammel and Armstrong because these patents do not disclose, teach or suggest the additional features recited by claims 49-60:

“wherein the height of the shovel blade prior to picking up the load of material is less than the height of the axle” (as recited in claim 49); or

“wherein the height of the shovel blade during propelling of a load of material is less than or about equal to the height of the wheel” (as recited in claim 50); or

“wherein the height of the blade when lowered to the surface is less than the height of the axle, and wherein the height of the blade during the recoil is less than or about equal to the height of the wheel” (as recited in claim 51); or

“wherein the apparatus is configured such that the middle portion of the driving member is generally horizontal when the blade is lowered to the surface to thereby allow selective

adjustment to the longitudinal positioning of the fulcrum without substantially changing the handle height relative to the surface on which the apparatus is being supported" (as recited in claim 52); or

"at least one sliding device attaching the axle to the middle portion of the driving member, the sliding device being slidable relative to the middle portion to thereby allow repositioning of the attachment point of the axle to the middle portion" (as recited in claim 53); or

"wherein the handle is adjustable through an extendable and rotatable connection to the driving member such that the handle can be slidably pulled out, slidably pushed in, and rotated relative to the driving member to thereby selectively adjust the handle height, handle length, and leverage ratio of the apparatus" (as recited in claim 54); or

"wherein the handle includes a substantially flat portion that is generally horizontal when the blade is lowered to the surface" (as recited in claim 55); or

"wherein the shovel blade has a height when lowered to the surface that is less than the height of the axle and that is less than or about equal to the height of the wheel after having picked up the material" (as recited in claim 56); or

"selectively repositioning the mounting location of the axle to the yoke" (as recited in claim 57); or

"wherein the wheel is substantially centrally disposed relative to a width of the apparatus" (as recited in claim 58); or

"wherein the middle portion of the driving member includes two spaced-apart members, and wherein the wheel is substantially centrally disposed between the two spaced-apart members" (as recited in claim 59); or

"means for selectively repositioning the attachment point of the axle to the middle portion" (as recited in claim 60).

The cited patents do not render obvious a wheeled apparatus having a single wheel, an axle, and a shovel blade with the particular relative sizing requirements recited in any one of claims 49, 50, 51, or 56. For example, Muzzammel discloses a pair of wheels having a diameter of between 6 and 26 inches. The Muzzammel shovel blade is higher than the axle, as shown in Fig. 2. Additionally, Muzzammel discloses that the two wheels are mounted to the axle, which, in turn, is mounted to bracing or directly to the bracing. The bracing is positioned below the linear or straight handle. In a typical operation of the Muzzammel device, a user pushing down on the handle to lift and move a load will raise the shovel blade to a height greater than the height of the wheel. The user will push the handle down to a substantially lower position to level or balance the load or lighten the pressure at the handle to enable easy user movement. By so doing, the load and the blade containing the load are elevated to a height that is greater than the height of the wheel. To transport the load, a user of Muzzammel must maintain the load in the balanced position, which requires that the user maintain the handle at the substantially lower position, which is often awkward to maintain and difficult to maneuver. Muzzammel does not disclose in the figures or in the description any other arrangement or configuration.

In contrast, claims 49, 50, 51, and 56 recite, in various combinations, that the shovel blade has a height when lowered to the surface that is less than the height of the axle and that is less than or about equal to the height of the wheel after having picked up the material. These relative dimensions and features are not disclosed by Muzzammel. Muzzammel discloses two wheels each having a diameter no greater than 26 inches and preferably between 6 and 26 inches. (Muzzammel, column 2, lines 30-35). Muzzammel also discloses braces that raise the handle above the axle and wheels to increase the height above the pivot point as a spacer. In so doing, the pivoting of a load in the scoop of Muzzammel will inherently raise the load above the axle and generally above the wheel.

In addition, the Muzzammel scoop has a height greater than the wheels' axle when the scoop is lowered to the surface. (Muzzammel, Figs. 1 and 2). This is different than claims 49, 51, and 56 where it is recited that the blade height is less than the height of the axle during scooping or picking up the load of material. Additionally, from Muzzammel Figs. 1 and 2, one skilled in the art can see that when the user pushes down on the handle of Muzzammel, the blade will rise up and have a height greater than the height of the wheel. This is due to the relative sizing of the wheels, shovel blade, frame/braces and the connection point of the pair of wheels to the braces that extend below the frame. Claims 49, 50, 51, and 56 recite a different configuration and relative dimensions between the blade, the axle, and wheels during surface contact and following material pickup, than what is disclosed by Muzzammel. For these additional reasons, claims 49, 50, 51, and 56 are believed to be allowable.

In addition, Muzzammel discloses two spaced-apart wheels. Neither of the Muzzammel wheels, however, are centrally disposed relative to a width of the apparatus (as recited in claim 58) or centrally disposed between the two spaced-apart members (as recited in claim 59). Advantageously, various embodiments of the invention include a single wheel that provides far greater maneuverability (e.g., tighter turning radius, easier manipulation, tipping and tilting, etc.) than a wheeled snow plough having two widely spaced-apart wheels as in Muzzammel. In addition, various embodiments of the present invention in which a single relatively large wheel (as opposed to two spaced-apart smaller wheels as in Muzzammel) can allow for more maneuverability (e.g., tighter turning radius with the ability to "turn on a dime", etc.), greater ability to clear snow around obstacles, and for increased ability to throw material from the shovel blade. As identified by the inventor hereof, the utilization of a single wheel having a diameter greater than about 30 inches provides advantages over Muzzammel and similar devices. The single large wheel enables the apparatus to be operated by a user over rough terrain including curbs that often have a height of 6 to 10 inches. The inventor identified the problems and limitations of the current assemblies and specifically chose a single wheel, versus multiple wheels like

Muzzammel, to increase ease of use and operability over these obstacles. For example, the present single wheel enables the user to angle or tilt the apparatus during operation or to tip or lean the apparatus to accomplish improved maneuvering, none of which the design of Muzzammel is capable of performing due to its two wheel assembly. In addition, having a single wheel substantially centrally disposed between two spaced-apart members of the driving member also allows the single wheel to roll along a clean path already cleared of snow by the shovel blade.

Furthermore, even if Armstrong and Muzzammel were properly combinable (which Applicant submits they are not for the reasons noted above), any logical combination would still result in subject matter different than what is claimed in claim 54. For example, the Armstrong handle itself is not extendable or rotatable. For these additional reasons, claim 54 should be allowable.

Finally, the axle in Muzzammel has a fixed connection point to the frame. Accordingly, Muzzammel does not disclose or teach the additional features recited in claims 52, 53, 54, 57, and 60 relating to repositioning the axle. In various embodiments, the ability to adjust the axle positioning in conjunction with an extendable/retractable handle allows a user to relatively easily and quickly adjust/tailor the gearing of the wheeled shovel to the user's particular body style and/or snow conditions. This ability to quickly and conveniently adjust and tailor the gearing in various embodiments of the wheeled shovel also increases the marketability and desirability for such devices.

### CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will

expedite prosecution of this application, the Examiner is invited to telephone the undersigned directly at 314-726-7502.

Applicant believes that the appropriate fees have been included with this filing. If, however, Applicant owes any additional fee(s), the Commissioner is hereby authorized to charge the fee(s) to Deposit Account No. **08-0750**. In addition, if there is ever any other fee deficiency or overpayment under 37 C.F.R. §1.16 or 1.17 in connection with this patent application, the Commissioner is hereby authorized to charge such deficiency or overpayment to Deposit Account No. **08-0750**.

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Respectfully submitted,

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